Iowa Department of Natural Resources
Environmental Protection Commission

ITEM **7** **DECISION**

TOPIC **Contract – University of Iowa Hygienic Laboratory – 2008 Ambient Biological Monitoring and Laboratory Services**

The Department requests Commission approval of a contract in the amount of $185,155.74 with the University of Iowa Hygienic Laboratory to conduct stream biological monitoring.

The objective of this program is to maintain and build upon existing efforts to assess streams in Iowa using biological monitoring protocols. The Clean Water Act requires states to monitor and assess all waters of the state for beneficial uses including aquatic life uses. This contract provides for several aspects of monitoring and assessment to determine biological integrity of Iowa streams including:

- Monitoring at wadeable reference sites that are used to set goals for biological integrity in streams of similar size, physiographic region, and landuses.
- Monitoring in headwater streams to build assessment techniques for small perennial streams.
- Development of a benthic macroinvertebrate Index of Biotic Integrity specifically tailored to Iowa's coldwater streams.
- Macroinvertebrate sampling at nonwadeable rivers to supplement and enhance the Iowa State University nonwadeable river monitoring and assessment project.
- Macroinvertebrate sampling at ambient water quality monitoring sites to evaluate flooding impacts to aquatic communities.
- Monitoring biological, chemical, and physical environmental indicators at sites randomly selected by the U.S. Environmental Protection Agency for the National Rivers and Streams Assessment (NRSA) project.

Funding for this contract comes from the Environment First Infrastructure Funds – Water Quality Monitoring Funds and EPA Section 106 Supplemental Monitoring Funds.

Mary Skopec
Section Supervisor
Water Monitoring and Assessment
Iowa Geological and Water Survey Bureau
Environmental Services Division

July 21, 2008

FY09 Ambient Biological Monitoring Budget

DESCRIPTION	Cost	Total/Activity	
Task 1: Wadable Reference Sites			
(20 sites + 10% QC)			
Full Bioasssessment Sampling	$51,099.50		
Benthic Sample Processing	$14,080.00		
Water Quality Analysis (AQLIFEST + Benthic Chlorophyll a)	$7,260.00		
		$72,439.50	
Task 2: Headwater Reference Streams			
(3 sites)			
Full Bioasssessment Sampling	$8,595.00		
Benthic Sample Processing	$1,920.00		
Water Quality Analysis (AQLIFEST)	$990.00		
		$11,505.00	
Task 3: Non-wadable Benthic Macroinvertebrate IBI			
(3 stream segments, 9 sites)			
Sampling Activities	$9,198.00		
Benthic Sample Processing	$4,320.00		
Water Quality Analysis (AQLIFEST)	$0.00		
		$13,518.00	
Task 4: Coldwater Benthic Macroinvertebrate IBI			
(3 sites)			
Sampling Activities	$7,681.00		
Benthic Sample Processing	$1,920.00		
Water Quality Analysis (AQLIFEST)	$990.00		
		$10,591.00	
Task 5: Ambient Monitoring			
(10 sites)			
Sampling Activities	$26,108.00		
Benthic Sample Processing	$4,800.00		
Water Quality Analysis (AQLIFEST)	$0.00		
		$30,908.00	
Task 6: EPA National Rivers and Streams Assessment (NRSA)			
(22 sites)			
Sampling Activities	$25,479.00		
Benthic Sample Processing	$0.00		
Water Quality Analysis (AQLIFEST)	$0.00		
		$25,479.00	
Miscellaneous Supplies and Equipment	$4,000.00	$4,000.00	
Maintenance and Repair	$2,000.00	$2,000.00	
Shipping	$1,000.00	$1,000.00	
Sub-total	$171,440.50	$171,440.50	
F&A	$13,715.24		
TOTAL Ambient Bioassessment Costs	$185,155.74		

Section 5 STATEMENT OF WORK

5.1 Statement of Work. Contractor shall perform the following tasks:

Task 1: Perform collection, analysis, and reporting for the Wadeable River and Stream Ecoregion Reference Site (REF) network.

- Twenty (20) reference sites that are mutually agreeable to IDNR and UHL will be selected from the list of potential sampling locations in Table 1. Sampling will occur between August 15 - October 15, 2008. Whenever practical, the specific sampling date should be set within two weeks before or after the date (month/day) of the previous sampling event.

- A biological sample consisting of one full biocriteria benthic macroinvertebrate (IBI) sample and one full biocriteria fish (IBI) sample will be collected at each site. A quantitative DNR habitat assessment will be completed and a grab water sample will be collected, preferably on the same date as biological sampling.

- The following Full Biocriteria Sample Description will be used:

    - **Field:** Each sampling event shall include sampling aquatic biota, quantitatively assessing stream habitat; and manually measuring stream flow. Field measurements of dissolved oxygen, pH and water temperature also shall be taken. Fish shall be identified to species or the lowest practical taxonomic endpoint, counted, and examined for external anomalies in the field.

    - **Laboratory:** A complete sample set consisting of four individual samples for benthic macroinvertebrates (3 standard-habitat, 1 multi-habitat) will be collected. Samples shall be sorted, identified, verified, and catalogued in the laboratory. Two voucher fish specimens of each species shall be retained from each site. Small fish or fish that are difficult to identify shall be preserved and identified in the laboratory to species or the lowest practical taxonomic level. Water sample analytes are listed in Table 2. Samples submitted for analysis through this activity shall be coded as ***AMBBIO***. Sample collection, handling, and analysis shall be conducted according to applicable DNR and UHL QA/QC documentation.

- All samples submitted to UHL by Department or UHL staff shall be coded to a specific monitoring activity and shall include a detailed list of the analyses to be performed unless other arrangements have been made before shipment of the sample to UHL. UHL log-in procedures shall accommodate this code. A monthly report of the logged-in samples shall be provided in a mutually agreeable format. Any deviation from normal sampling procedures, such as a change in sampling location, omission of

samples for analysis, etc., shall be identified to DNR in writing prior to transmittal of analytical results.

- Field data sheets and results of biological, habitat and water sample analyses shall be provided by March 31, 2009. Water monitoring data will be electronically transferred in a STORET-compatible format via the IGS FTP site. Chemical data shall be transferred in a mutually agreeable format for entry into STORET.

- Benthic macroinvertebrate, fish assemblage, and stream physical habitat data will be entered into the DNR Biocrit database. All data entry shall be performed according to the Department's approved Standard Operating Procedure (SOP).

- Analytical data will be transmitted to the Department within time limits and by methods that are mutually agreeable by both parties.

- Information on data quality requirements and assessments (such as detection limit, quantitation limit, estimated accuracy, accuracy protocol, estimated precision, and precision protocol) will be submitted to DNR for any sample upon request. Information on the analytical reference method, sample preservation and holding time also shall be provided if requested.

- Copies of revised Methods Manuals and Standard Operating Procedure Manuals to the Department will be provided upon request. Copies of manuals and procedures shall be available from the laboratory.

Table 1. Potential Wadeable Reference Stream Sampling Locations (primary sites (unshaded) are first priority; secondary sites are for replacement if needed).

Flood Magnitude			Precip %						
none	minor / moderate	major	normal	SiteID	StreamName	NearestLandmark	County	UTMNorth	UTMEast
	x		125-150	114	Bear Creek	Skunk River Greenbelt-Ames	Story	4662542	453616
x			90-125	34	Big Muddy Creek	Spencer	Clay	4783312	331630
		x	150-300	61	Buffalo Creek	Central City	Linn	4673781	628286
	x		125-200	32	Buttrick Creek	Waters County WA - Grand Junction	Greene	4653683	392391
		x	150-200	3	Crane Creek	Lourdes	Howard	4790038	555897
		x	150-200	29	Deer Creek	Carpenter - 1 mile NW	Mitchell	4807925	498185
	x		110-150	16	East Branch West Nishnabotna River	Avoca	Shelby	4599293	307724
	x		125-150	170	Elk Creek	Elk Creek Marsh SWMA - Kensett	Worth	4803976	472354
	x		125-150	17	Howerdon Creek	Winterset	Madison	4579336	407161
	x		125-200	15	Jordan Creek	1.5 Miles Upstr Confl. With Farm Creek	Pottawattamie	4562376	301077
		x	200-300	154	Lime Creek	Lime Creek Park-Brandon	Buchanan	4686824	583862
		x	150-300	40	Little Maquoketa River	Twin Springs Road-Dubuque	Dubuque	4709357	677940
x			75-110	64	Little Rock River	Little Rock CWA-George	Lyon	4802951	260303
x			75-110	50	Little Waterman Creek	Waterman Creek SWMA - Hartley	O'Brien	4772540	299825
		x	150-200	20	Maynes Creek	Mallory Co. Park-Hampton	Franklin	4723383	481091
		x	125-200	36	Richland Creek	Haven	Tama	4638744	543601
		x	125-200	27	Rock Creek	Tipton	Cedar	4621628	653778
		x	150-200	54	South Beaver Creek	Parkersburg	Grundy	4711413	515066
x			75-110	255	Waterman Creek	Sutherland	O'Brien	4760188	302299
	x		125-150	33	West Buttrick Creek	Spring Lake Park	Greene	4658371	393573
		x	125-200	1	White Fox Creek	Webster City	Hamilton	4709573	435297
	x		110-150	25	Willow Creek	Quimby	Cherokee	4724572	275822
					Secondary Sites				
	x		110-150	189	East Branch Iowa	Goodell	Hancock	4754805	452966
	x		125-200	225	East Buttrick	Pound Pit Co Area-dana	Greene	4659112	396737
	x		110-150	51	Mosquito Creek	Panora	Dallas	4616028	395081
		x	150-200	5	Old Mans Creek	Williamstown	Johnson	4606634	607550
		x	200-300	106	Plum Creek	Hopkinton	Delaware	4693886	644865
	x		100-150	79	Soap Creek	Eldon SWMA - Eldon	Davis	4527284	561663
	x		125-150	43	South Whitebreast Creek	Weldon	Clarke	4535157	448401
		x	150-200	11	Wapsipinicon River	Twin Ponds Park	Chickasaw	4762387	549687
	x		125-150	6	West Nishnabotna River	Shelby Co. Upper Nish Hab Area	Shelby	4630098	318247
	x		125-150.	87	White Breast Creek	Lacona	Lucas	4550418	468008
	x		125-150	31	Willow Creek	Willow Creek Wildlife Area - Hanlontown	Worth	4791603	471276

Table 2. Biological Assessment Grab Water Sampling Analytes.

Biochemical Oxygen Demand (BOD)	Phosphorous Series: Dissolved Orthophosphate, Total Phosphorus
Chloride	Stream Flow (Field)
Chlorophyll-A (water)	Total Dissolved Solids
Chlorophyll-A (periphyton; only at coldwater (Task 4) sites)	Total Organic Carbon
Dissolved Inorganic Carbon	Total Suspended Solids
Dissolved Organic Carbon	Turbidity
Dissolved Oxygen (Field)	Volatile Suspended Solids
Nitrogen series: total ammonia-N, nitrate + nitrite-N, total kjehldahl-N	Water Temperature (Field)
pH (field)	

Task 2: Perform collection, analysis, and reporting for the Reference Condition Development for Headwater Streams (HWREF) project.

Three sites that are mutually agreeable to IDNR and UHL will be selected from the potential sampling locations listed inTable 3. Sampling will occur between August 15 and October 15, 2008.

Sampling at each site will include one full biocriteria benthic macroinvertebrate (IBI) sample, one full biocriteria fish (IBI) sample, a quantitative DNR habitat assessment, and a grab water sample preferably collected on the same date as biological sampling. Field and laboratory chemical/physical water quality analytes are listed in Table 2.

o The following Biocriteria Sample Description will be used:

- **Field:** Gather data from the sample locations selected from Table 3. Each sampling event shall include the following: sampling aquatic biota; quantitatively assessing stream habitat; manually measuring stream flow; and collecting a water quality grab sample. Field measurements of dissolved oxygen, pH and water temperature also shall be taken. Fish shall be identified to species or the lowest practical taxonomic endpoint, counted, and examined for external anomalies in the field.

- **Laboratory:** Collect four samples for Benthic macroinvertebrates from each site (3 standard-habitat, 1 multi-habitat). Samples shall be sorted, identified, verified, and catalogued in the laboratory. Two voucher fish specimens of each species shall be retained from each site. Small fish or fish that are difficult to identify shall be preserved and identified in the laboratory to species or the lowest

practical taxonomic level. Grab water sample analytes are listed in Table 2. Samples submitted for analysis through this activity shall be coded as ***AMBBIO***. Sample collection, handling, and analysis shall be conducted according to applicable DNR and UHL QA/QC documentation.

Table 3. Potential Sites for HWREF Stream Sample Collection and Analysis.

SiteID	StreamName	NearestLandmark	County	UTMNorth	UTMEast
649	Allen Creek	Stratford - Timber HWCRS	Webster	4681207	418564
659	Bailey Creek	Thorton - Grass Ditch HWCRS	Cerro Gordo	4754035	464942
654	Bear Creek	Roland - Mixed HWCRS	Story	4669574	458427
653	Drainage Ditch #81	Nevada - Mixed HWCRS	Story	4656908	468767
655	Holiday Creek	Coalville - Mixed HWCRS	Webster	4700451	409359
650	Onion Creek	Ames - Timber HWCRS	Story	4655676	443835
652	South Minerva Creek	Clemons - Timber HWCRS	Marshall	4658501	484587
651	South Minerva Creek	St. Anthony - Grass HWCRS	Marshall	4658917	481922
656	Unn. Trib. Purgatory Creek	Lohrville - Grass HWCRS	Calhoun	4681723	368667
657	Unn.Trib. East Buttrick Creek	Gowrie - Harcourt Grass Ditch HWCRS	Webster	4678694	397725
658	Worrell Creek	Ames - Timber HWCRS	Story	4649903	445500

Task 3: Perform collection, analysis, and reporting from the Nonwadeable Rivers and Streams Biological Assessment (NWBMIBI) project.

- Three river segments that are mutually agreeable to IDNR and UHL will be selected from the potential sampling locations listed in Table 4. Each segment will be sampled once for benthic macroinvertebrates betweeen August 15 and October 15, 2008).

- Within each river segment, three sites will be sampled for a total of nine benthic macroinvertebrate samples collected. A manual instantaneous stream flow measurement will be obtained on each sampling occasion, except where it is impractical or unnecessary to do so, in which case the flow level will be estimated from the nearest gauging station.

- The following Sample Description will be used:

    - **Field:** Each sampling event shall include the following: sampling benthic macroinvertebrates, qualitatively assessing stream habitat; and manually measuring stream flow. Field measurements of dissolved oxygen, pH and water temperature also shall be taken.

    - **Laboratory:** A complete sample set consisting of four individual samples for benthic macroinvertebrates (3 standard-habitat, 1 multi-habitat) collected from each site. Samples shall be sorted, identified, verified, and catalogued in the laboratory. Samples submitted for analysis through this activity shall be coded as ***AMBBIO***. Sample collection, handling, and analysis shall be conducted according to applicable DNR and UHL QA/QC documentation.

Table 4. Potential Nonwadeable BMIBI Development Sampling Locations (primary segments are first priority for sampling).

PRIMARY SITE	SEGNAME	ACCESS NAME	COUNTY_	UTMX	UTMY
	Big Sioux River	Klondike Old Mill	SIOUX	216450	4790872
	Boone River	River Runner	HAMILTON	433303	4695006
	Cedar River	Palisades	LINN	626105	4639113
X	Cedar River	Rotary	FLOYD	524074	4774260
	Cedar River	Turkeyfoot/Wasington Union	BLACK HAWK	541638	4715401
	Cedar River	Vinton	BENTON	582146	4669320
	Chariton River	Sharon Bluff	APPANOOSE	517456	4508573
	Des Moines River	Dogwood	BOONE	425668	4646466
	Des Moines River	Eldon	WAPELLO	565930	4528932
	Des Moines River	Farmington	VAN BUREN	606455	4499124
	Des Moines River	Robert Mulroney	PALO ALTO	371576	4763841
	Des Moines River	Yellow Banks	POLK	460367	4599263
	East Nishnabotna River	Nishnabotna	MONTGOMERY	311469	4541929
	Iowa River	3 Bridges	MARSHALL	513482	4654934
X	Iowa River	Fred T Schwab	LOUISA	653573	4559375
	Iowa River	Koszta	IOWA	580519	4627985
	Iowa River	River Junction	WASHINGTON	623518	4595634
	Little Sioux River	Silver Sioux	CHEROKEE	287691	4725514
	Maquoketa River	Joinerville Park	JACKSON	685938	4661141
	Maquoketa River	Pictured Rocks	JONES	656356	4674455
X	Maquoketa River	Spragueville	JACKSON	712985	4662174
	North Raccoon River	Scranton/McMahon	GREENE	377994	4653408
	North Skunk River	Checauqua	KEOKUK	566441	4572621
	Rock River	Island City	LYON	243607	4814150
	Shell Rock R	Clarksville/Heerywood	BUTLER	529705	4734976
X	Skunk River	Oakland Mills	HENRY	616680	4532271
	South Raccoon River	Middle Raccoon	DALLAS	398993	4602603
	South Skunk River	Oswalt Bridge	JASPER	474147	4616083
	South Skunk River	South Skunk	KEOKUK	568174	4565294
X	Turkey River	Turkey	CLAYTON	655420	4732158
	Upper Iowa River	Upper Dam	ALLAMAKEE	633170	4810238
	Wapsipinicon River	Alien Grove	CLINTON	695823	4626108
	Wapsipinicon River	Iorn Bridge	LINN	606664	4683492
	Wapsipinicon River	Olin/Anamosa	JONES	654494	4651851

Task 4: Perform collection, analysis, and reporting for the Coldwater Benthic Macroinvertebrate Index of Biotic Integrity (CWBMIBI) project.

- Three sample sites that are mutually agreeable to IDNR and UHL will be selected from the potential sampling locations listed in Table 5.

- One full biocriteria benthic macroinvertebrate (IBI) sample will be collected from each site between August 15 and September 15, 2008. A quantitative DNR habitat assessment will be completed and a grab water sample will be collected, preferably on the same date as benthic macroinvertebrate sampling. Using REMAP procedures, a composite

periphyton Chlorophyll pigment sample will be collected from the riffle that is quantitatively sampled for benthic macroinvertebrates. A continuous temperature data logger will be deployed for the entire period lasting from August 15 through September 15, 2008. The data loggers will be programmed to measure water temperature around-the-clock every 15 minutes. Field and laboratory chemical/physical water quality analytes are listed in Table 2.

- The following Biocriteria Sample Description will be used:

  - **Field:** Gather data from the sample locations selected from Table 5. Each sampling event shall include the following: sampling aquatic biota; quantitatively assessing stream habitat; manually measuring stream flow; and collecting a water quality grab sample. Field measurements of dissolved oxygen, pH and water temperature also shall be taken.

  - **Laboratory:** Collect four samples for Benthic macroinvertebrates from each site (3 standard-habitat, 1 multi-habitat). Samples shall be sorted, identified, verified, and catalogued in the laboratory. Grab water sample analytes are listed in Table 2. Samples submitted for analysis through this activity shall be coded as ***AMBBIO***. Sample collection, handling, and analysis shall be conducted according to applicable DNR and UHL QA/QC documentation.

Table 5. Potential Sites for CWBMIBI Stream Sample Collection and Analysis.

SiteID	StreamName	NearestLandmark	County	UTMNorth	UTMEast
663	Big Mill Creek	Bellevue - BigMil1	Jackson	4682695	704373
662	Brownfield Creek	Colesburg - BroCr1	Clayton	4724189	643591
666	Clear Creek	Lansing - CCr1	Allamakee	4802179	641383
669	Duttons Creek	West Union - DuCr1 - Duttons Cave Park	Fayette	4761649	600661
668	Little Paint Creek	Harpers Ferry - LiPa2 - downstream	Allamakee	4782004	643870
667	Little Paint Creek	Harpers Ferry - LiPaCr1 - upstream	Allamakee	4784464	642460
664	South Big Mill Creek	Bellevue - SBigM1	Jackson	4682376	704589
673	South Pine Creek	Satre - SoPCr1	Winneshiek	4803145	608282
665	Storybook Hollow	Bellevue - StHol1	Jackson	4683132	703044
670	Twin Springs Creek	Colesburg - TwSpr1	Delaware	4721585	641148

Task 5: Perform collection, analysis, and reporting for the Biological Assessment of Ambient Monitoring Sites.

- Ten monitoring sites that are mutually agreeable to IDNR and UHL will be selected from the potential sampling locations listed in Table 6. Each site

will be sampled once for benthic macroinvertebrates betweeen August 15 and October 15, 2008.

- The following Sample Description will be used:

  - **Field:** Each sampling event shall include sampling aquatic biota, qualitatively assessing stream habitat, and manually measuring stream flow. Field measurements of dissolved oxygen, pH and water temperature also shall be taken.

  - **Laboratory:** A complete sample set consisting of four individual samples for benthic macroinvertebrates (3 standard-habitat, 1 multi-habitat) will be collected at each site. Samples shall be sorted, identified, verified, and catalogued in the laboratory. Samples submitted for analysis through this activity shall be coded as ***AMBBIO***. Sample collection, handling, and analysis shall be conducted according to applicable DNR and UHL QA/QC documentation.

Table 6. Potential Ambient Monitoring Sampling Locations.

SiteID	StreamName	NearestLandmark	County	UTMNorth	UTMEast
194	Big Cedar Creek	Gibson St Rec Area- Oakland Mills	Henry	4531291	611674
285	Cedar River	Charles City/carrville	Floyd	4761541	532396
289	Chariton River	Centerville	Appanoose	4515465	512008
223	East Fork Des Moines River	St Joseph	Kossuth	4756176	399349
221	East Nishnabotna River	Shenandoah	Page	4517691	298709
287	English River	Riverside	Washington	4592519	618541
184	Floyd River	James	Plymouth	4719154	228190
284	Iowa River	Columbus Junction	Louisa	4571025	638618
222	North Raccoon River	Sac City	Sac	4689440	336395
288	Upper Iowa River	Dorchester	Allamakee	4808702	620693
283	Volga River	Elkport	Clayton	4734460	641041
280	West Fork Cedar River	Finchford	Black Hawk	4719714	537415

Task 6: Assist with sample collection for the National River and Stream Assessment project.

- 23 sites that are mutually agreeable to IDNR and UHL will be selected from the potential sampling locations listed in Table 7.

- The following Sample Description will be used:

    - **Field:** Each sampling event shall include the following: sampling aquatic biota; quantitatively assessing stream habitat; manually measuring stream flow; collecting composite samples of benthic algae, fine sediment, and fish tissue; collecting a grab sample for water quality analytes. Field measurements of dissolved oxygen, pH conductivity, and water temperature also shall be taken.
    - **Laboratory:** No laboratory analytical services are required for this task.

Table 7. Potential EPA/NRSA sampling locations.

SITEID	NAME	WADEABLE	STR_ORD	WSA_SITEID	XDNR83	YDNR83
FW08IA023	Unnamed Tributary	y	1st		281102	4527989
FW08IA025	Unnamed Tributary	y	1st		595250	4548087
FW08IA030	Unnamed Tributary	y	1st		672658	4702910
FW08IA031	Unnamed Tributary	y	1st		263529	4698677
FW08IA032	Unnamed Tributary	y	1st		510014	4661915
FW08IA039	Unnamed Tributary	y	1st		359063	4540077
FW08IA041	Unnamed Tributary	y	1st		632748	4672589
FW08IA045	Unnamed Tributary	y	1st		563260	4637642
FW08IA002	Bell Creek	y	2nd	IAW02344-0100	608203	4759425
FW08IA005	Montgomery Creek	y	2nd	IAW02344-0112	330566	4762196
FW08IA009	Quarter Section Run	y	2nd	IAW02344-0139	552697	4735245
FW08IA012	Perry Creek	y	2nd	IAW02344-0130	223905	4728181
FW08IA014	Little Wolf Creek	y	2nd	IAW02344-0232	521262	4674070
FW08IA018	Battle Creek	y	2nd	IAW02344-0104	291007	4702468
FW08IA027	Eller Branch	y	2nd		341296	4582635
FW08IA036	Little Buffalo Creek	y	2nd		429629	4801065
FW08IA004	West Tarkio Creek	y	3rd	IAW02344-0106	314083	4522092
FW08IA008	Unnamed Tributary	y	3rd	IAW02344-0098	588198	4728344
FW08IA011	West Tarkio Creek	y	3rd	IAW02344-0123	304578	4505080
FW08IA017	Middle Fork Little Maquo	y	3rd	IAW02344-0261	669078	4714101
FW08IA043	Beaver Creek	y	3rd		383522	4604928
FW08IA006	Old Mans Creek	y	4th	IAW02344-0117	621245	4600967
FW08IA007	Floyd River	y	4th	IAW02344-0122	241252	4745093
FW08IA013	Yellow River	y	4th	IAW02344-0253	613171	4777138
FW08IA015	North Raccoon River	y	4th	IAW02344-0111	336576	4697274
FW08IA016	East Nodaway River	y	4th	IAW02344-0115	339024	4526231
FW08IA028	Beaver Creek	y	4th		414819	4633682
FW08IA001	Soap Creek	y	5th	IAW02344-0134	542504	4523212
FW08IA003	Maple River	y	5th	IAW02344-0110	258463	4661600
FW08IA010	Wolf Creek	y	5th	IAW02344-0109	566393	4685083
FW08IA020	West Fork Cedar River	?	5th		519597	4722945
FW08IA029	Wolf Creek	y	5th		555706	4677456
FW08IA035	Little Rock River	?	5th		239246	4795640
FW08IA042	Volga River	?	5th		620153	4740159
FW08IA046	Turkey River	?	5th		598495	4766740
FW08IA021	Skunk River	n	6th		612246	4540110
FW08IA024	Des Moines River	n	6th		348927	4812600
FW08IA026	Turkey River (mouth)??	n	6th		661204	4731370
FW08IA038	Maquoketa River	n	6th		718488	4667668
FW08IA040	Little Sioux River	n	6th		320960	4752356
FW08IA044	South Skunk River	n	6th		508196	4592665
FW08IA019	Big Sioux River	n	7th		205438	4743994
FW08IA033	Iowa River	n	7th		642697	4568032

Section 6 MONITORING AND REVIEW

6.1 Task Milestone Dates. Contractor shall use its best efforts to complete its obligations under this Contract by the Task Milestone Dates set out in the following table:

Obligation	Task Milestone Date
Task 1-6: Sampling progress and sample Log-in Report in a format discussed and agreed to by the parties.	To the Department monthly
Task 1-5: Provide field data sheets and results of biological, habitat and water sample analyses. Transfer water monitoring data electronically in a STORET-compatible format via the IGS FTP site.	To the Department: March 31, 2009.
Task 1-5:.Enter benthic macroinvertebrate, fish assemblage, and stream physical habitat data into the DNR Biocrit database.	on-going
Task 1-5: Provide sample information to the Department upon request. Provide copies of Methods Manuals/Standard Operating Procedure Manuals (available from the laboratory) to the Department upon request.	on-going